

What is claimed is:

1. A method of producing a tubular formed body, comprising the steps of:

using a forming device having a rotating frame and a forming blade movable in axial and radial directions of the rotating frame;

fixing one side-edge portion of a tubular blank to a predetermined position of the rotating frame;

setting the other side-edge portion of the tubular blank to the rotating frame so that the other side-edge portion is movable;

pressing the forming blade to any one of an inner diameter side and an outer diameter side of a peripheral wall of the tubular blank while rotating the rotating frame;

reciprocating the forming blade from the fixed side-edge portion in any one of radially outward and inward directions and moving the forming blade toward the movable side-edge portion; and

forming a tubular formed body in which at least any one of a ridge portion and a recess portion continuing in circumferential direction is shaped in the peripheral wall.

2. The method of producing a tubular formed body according to claim 1, wherein in a case where the forming blade is reciprocated in the radially outward direction while the forming blade is being pressed to the inner diameter side of the peripheral wall of the tubular blank, the side-edge portion fixed to the predetermined position is made equal to a minimum inner diameter of the tubular formed body.

3. The method of producing a tubular formed body according to claim

2, wherein a wave-shaped die corresponding to an outer peripheral shape of the tubular formed body is placed on an outside of the tubular blank in the radial direction.

4. The method of producing a tubular formed body according to claim 1, wherein in a case where the forming blade is reciprocated in the radially inward direction while the forming blade is being pressed to the outer diameter side of the peripheral wall of the tubular blank, the side-edge portion fixed to the predetermined position is made equal to a maximum outer diameter of the tubular formed body.

5. The method of producing a tubular formed body according to claim 4, wherein a wave-shaped die corresponding to an outer peripheral shape of the tubular formed body is placed on an inside of the tubular blank in the radial direction.

6. The method of producing a tubular formed body according to any one of claims 1 to 5, wherein the movable side-edge portion is bound to the same radial position as that of the side-edge portion fixed to the predetermined position to be movable in the axial direction.

7. The method of producing a tubular formed body according to any one of claims 1 to 6, wherein a biasing force in a direction of the side fixed to the predetermined position is applied to the movable side-edge portion.

8. The method of producing a tubular formed body according to any one of claims 1 to 6, further comprising an actuator provided at the movable side-edge portion,

wherein the actuator is operated toward the side fixed to the predetermined position, in accordance with a path along which the forming

blade moves in the radial and axial directions.

9. The method of producing a tubular formed body according to any one of claims 1 to 8, wherein a cross-sectional shape of a pressing end of the forming blade is an arc.

10. The method of producing a tubular formed body according to any one of claims 1 to 9, wherein after the ridge or recess portion has been formed by moving the forming blade from the side-edge portion of the tubular blank which is fixed to the predetermined position to the movable side-edge portion, the ridge or recess portion is re-formed by moving the forming blade from the movable side-edge portion to the side-edge portion fixed to the predetermined position in a reverse direction, and the reciprocating forming is repeated at least once.

11. The method of producing a tubular formed body according to any one of claims 1 to 10, further comprising the step of: after forming the tubular formed body, finishing the tubular formed body into a final shape by pressing forming rollers against inside and outside of the tubular formed body, respectively.

12. The method of producing a tubular formed body according to any one of claims 1 to 11, wherein the tubular blank is made of a metal material having a breaking stress of not less than 600 MPa.

13. The method of producing a tubular formed body according to any one of claims 1 to 12, wherein the tubular formed body is an annular shell of a run-flat support body.

14. A device of producing a tubular formed body comprising:
a rotating frame coupled to a rotating shaft; and

a forming blade movable in axial and radial directions of the rotating frame,

wherein one side-edge portion of a tubular blank is fixed to a predetermined position of the rotating frame, other side-edge portion thereof is set to the rotating frame to be movable, and the tubular formed body production device further comprises a control unit for pressing the forming blade to any one of an inner diameter side and an outer diameter side of a peripheral wall of the tubular blank, and for reciprocating the forming blade from the fixed side-edge portion in any one of radially outward and inward directions and moving the forming blade toward the movable side-edge portion.

15. The device of producing a tubular formed body according to claim 14, wherein the movable side-edge portion is bound to the same radial position as that of the side-edge portion fixed to the predetermined position.

16. The device of producing a tubular formed body according to any one of claims 14 and 15, further comprising, at the movable side-edge portion, a spring for biasing the movable side-edge portion toward the side fixed to the predetermined position.

17. The device of producing a tubular formed body according to any one of claims 14 and 15, further comprising, at the movable side-edge portion, an actuator for moving the movable side-edge portion toward the side fixed to the predetermined position.

18. The method of producing a tubular formed body according to any one of claims 14 to 17, wherein the tubular formed body is an annular shell of a run-flat support body.